## IN THE CLAIMS

Please amend the claims to read as follows:

Listing of Claims

- 1-11. (Canceled).
- 12. (New) A CDMA transmission apparatus comprising:

a spreading code generator that generates a  $b^{th}$  chip C(a,b) of an  $a^{th}$  spreading code by a following equation,

$$C(a,b) = e^{j(2n\pi/N)}$$

where e is a base of natural logarithm, N is a length of the spreading code,  $n=a\times b$ , a=0-N-1, and b=0-N-1; and

a spreader that spreads a transmission signal using the spreading code generated in the spreading code generator, wherein

an inverse discrete Fourier transformer is applied to the spreading code generator and the spreader.

13. (New) A CDMA transmission apparatus comprising:

a spreading code generator that generates a  $b^{th}$  chip C(a,b) of an  $a^{th}$  spreading code by a following equation,

$$C(a,b) = e^{j(2n\pi/N)}$$

where e is a base of natural logarithm, N is a length of the spreading code,  $n=a\times b$ , a=0-N-1, and b=0-N-1; and

a spreader that spreads a transmission signal using the spreading code generated in the spreading code generator, wherein

a plurality of cascaded inverse discrete Fourier transformers is applied to the spreading code generator and the spreader, and performs inverse discrete Fourier transform on the transmission signal hierarchically.

## 14. (New) A CDMA reception apparatus comprising:

a spreading code generator that generates a  $b^{th}$  chip C(a,b) of an  $a^{th}$  spreading code by a following equation,

$$C*(a,b) = e^{-j(2n\pi/N)}$$

where e is a base of natural logarithm, N is a length of the spreading code, n=a×b, a=0-N-1, and b=0-N-1; and

a despreader that despreads a received signal using the spreading code generated in the spreading code generator, wherein

a discrete Fourier transformer is applied to constitute the spreading code generator and the despreader.

## 15. (New) A CDMA reception apparatus comprising:

a spreading code generator that generates a b<sup>th</sup> chip C(a,b) of an a<sup>th</sup> spreading code by a following equation,

$$C*(a,b) = e^{-j(2n\pi/N)}$$

where e is a base of natural logarithm, N is a length of the spreading code,  $n=a\times b$ , a=0-N-1, and b=0-N-1; and

a despreader that despreads a received signal using the spreading code generated in the spreading code generator, wherein

a plurality of cascaded discrete Fourier transformers is applied to the spreading code generator and the despreader, and performs discrete Fourier transform on the received signal hierarchically.